

PROSTATE CANCER

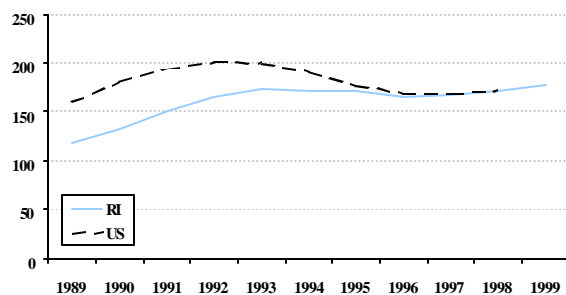
Prostate cancer begins as a tumor in the prostate gland of the urinary tract. It may spread to other areas of the body. Enlargement of the prostate is often normal for men, especially as they age. However, abnormal enlargement can be the result of a malignant tumor. (RICAN)

Prostate cancer is the most commonly diagnosed cancer among RI males (average annual of 850 newly diagnosed cases in each of the five years 1997-2001), and accounted for 14% of all newly diagnosed cancers in 1997-2001, including both males and females. Prostate cancer is the second leading cause of cancer death among RI males (average annual of 140 deaths in each of the five years 1996-2000), and accounted for 6% of all cancer deaths in 1996-2000, including both males and females. In Rhode Island, about 5,918 males alive today were diagnosed with prostate cancer at some point in the past 25 years (2000). (RICR)

Cancer Rates

Figure 13-1. Prostate cancer incidence by year

Average annual invasive* prostate cancer incidence rates** by year among males, RI and US, 1987-2001***.

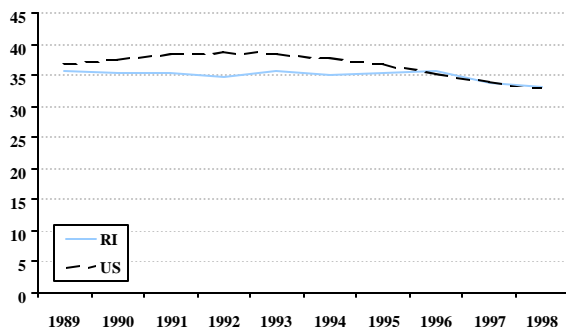


* Invasive includes the following stages of disease at diagnosis: local, regional, distant, and unknown.
** Rates are age-adjusted to the year 2000 US standard population, expressed as cases per 100,000 population.
*** Rates are five-year moving averages.
Source: RICR, HEALTH - calculated with SEER*Stat; SEER Cancer Statistics Review, 1973-1999; 1998 US data is from SEER Public-Use 1973-2000 Data - calculated with SEER*Stat.

The age-adjusted incidence of invasive prostate cancer among RI males of all races increased from 118 cases per 100,000 in 1989 to 173 cases per 100,000 in 1993 and remained around 170 cases per 100,000 males until 1998 (based on five-year moving averages). From 1989 to 1992, the age-adjusted incidence of invasive prostate cancer among US males of all races increased from 160 cases per 100,000 males to 201 cases per 100,000 men. This was followed by a decrease to 169 cases per 100,000 in 1997 (based on five-year moving averages). RI's invasive prostate cancer rates were below rates for the nation as a whole until 1997.

Figure 13-2. Prostate cancer mortality by year

Average annual prostate cancer mortality rates* by year among males, RI and US, 1987-2000**.

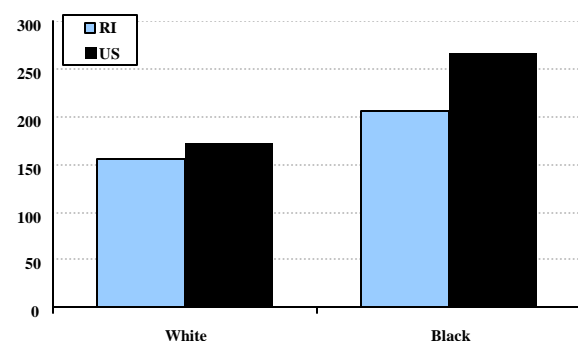


* Rates are age-adjusted to the year 2000 US standard population, expressed as deaths per 100,000 population.
** Rates are five-year moving averages.
Source: CDC WONDER, CDC; 1998 US data is from SEER US Mortality 1969-2000 Data - calculated with SEER*Stat.

No significant change has occurred in average annual age-adjusted mortality of invasive prostate cancer among RI males of all races (about 35 deaths per 100,000 from 1989 to 1998, based on five-year moving averages). The analogous prostate cancer mortality rates for US males of all races averaged 38 deaths per 100,000 from 1989 through 1995, then decreased to a low of 34 deaths per 100,000 in 1997 (based on five-year moving averages).

Figure 13-3. Prostate cancer incidence by race

Average annual invasive prostate cancer incidence rates* by race among males, RI and US, 1987-2000.



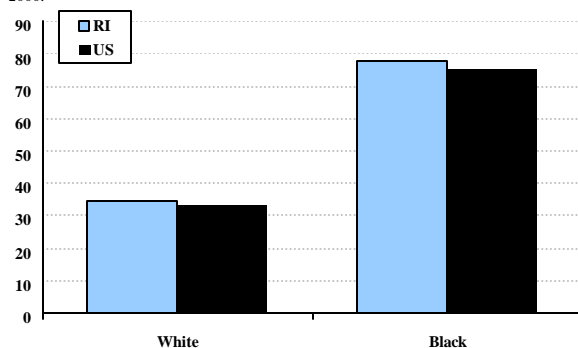
* Rates are age-adjusted to the year 2000 US standard population, expressed as cases per 100,000 population.
Source: RICR, HEALTH; SEER Public-Use 1973-2000 Data; calculated with SEER*Stat.

In RI, during 1987-2000, prostate cancer incidence rates were higher among black males (206 cases per 100,000) than among white males (156 cases per 100,000). This gap was larger among US black males (268 cases per 100,000) and US white males (172 cases per 100,000).

[Note: RI incidence data for 2001 is currently available. US incidence data is only available through 2000. For comparability, the figure at left contains RI data through 2000.]

Figure 13-4. Prostate cancer mortality by race

Average annual prostate cancer mortality rates* by race among males, RI and US, 1987-2000.



* Rates are age-adjusted to the year 2000 US standard population, expressed as deaths per 100,000 population.
Source: Office of Vital Records, HEALTH; SEER US Mortality 1969-2000 Data; calculated with SEER*Stat.

In RI, during 1987-2000, prostate cancer mortality rates were more than two times as high among black males (78 deaths per 100,000) than among white males (34 deaths per 100,000). A similar difference was seen in US prostate cancer mortality rates.

Figure 13-3. Prostate cancer mortality by county
Average annual prostate cancer mortality rates* among males
by county and statistical difference from US rates, RI, 1996-2000.



In 1996-2000, average annual prostate cancer mortality rates among males in RI counties were not statistically different from the US rate.

[Note: Maps are color-coded based on comparison to US mortality rates. When the US rates fall within the 95% confidence interval (shown in parentheses), it suggests that there is no statistical difference. Please see Key for Maps in **About the Data** (section 3) for a clear delineation of counties.]

* Rates are age-adjusted to the year 2000 US standard population, expressed as deaths per 100,000.
Data source: Office of Vital Records, HEALTH; calculated with SEER*Stat.
Map source: [HEALTHgis](#).

Healthy People 2010 Targets

Mortality: By 2010, reduce the prostate cancer death rate to 28.8 deaths per 100,000 males (age-adjusted to the year 2000 standard population of the United States; baseline = 32.0 deaths per 100,000 males in 1998).

Risk Factors

The risk of developing prostate cancer is higher among men over age 50 (risk increases with age), African Americans, and those with a family history of prostate cancer. (Clinical, NCI summaries) Speculations about the role of diet, environmental factors, and hormones as risk factors for prostate cancer are inconclusive. (Stanford)

Prevention

Although prostate cancer has been linked to several risk factors, effective preventives are unknown. (Stanford)

Screening

Common screening tests for prostate cancer are the prostate-specific antigen (PSA) and the digital rectal examination (DRE). Although the PSA screening test is non-invasive, relatively inexpensive, and effective in the early detection of prostate tumors, its use is controversial. Clinical trials in progress have not yet proven that early detection and treatment are effective in

reducing prostate cancer mortality, mass screening efforts are costly, and treatment is associated with high morbidity (e.g. urinary incontinence and sexual dysfunction).

Information on prostate cancer screening rates is unavailable at this time.

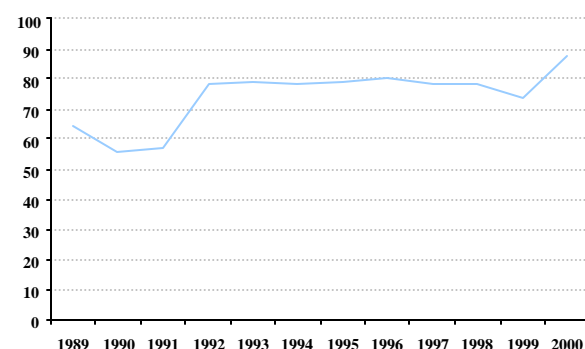
Treatment

There are three options for surgical treatment of prostate cancer: radical prostatectomy, cryosurgery, and (least commonly) transurethral resection of the prostate (TURP). Non-surgical treatment options for prostate cancer include: external beam radiation, brachytherapy (internal radiation therapy), strontium 89, hormone therapy, chemotherapy, expectant therapy (watch and wait), and clinical trials. (RICAN)

The percent of prostate cancer cases in RI ACOS-approved treatment programs and the percent staged with AJCC staging methodology is detailed below.

Figure 13-6. Prostate cancer in ACOS programs by year

Percent of prostate cancer cases treated in ACOS approved cancer treatment programs by year among males, RI, 1989-2000.

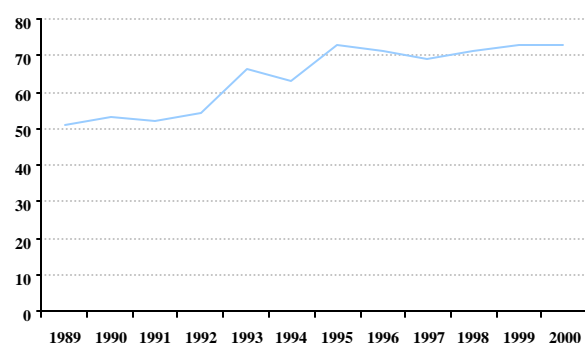


Source: RICR, HEALTH

The percent of prostate cancer case reports from ACOS approved hospital cancer treatment programs in RI averaged 59% in 1989-1991, increased to 78% in 1992, hovered just below 80% from 1992 to 1998 and by 2000 had increased to 88%.

Figure 13-7. Prostate cancer with AJCC staging by year

Percent of prostate cancer cases staged with AJCC staging methodology by year among males, RI, 1989-2000.

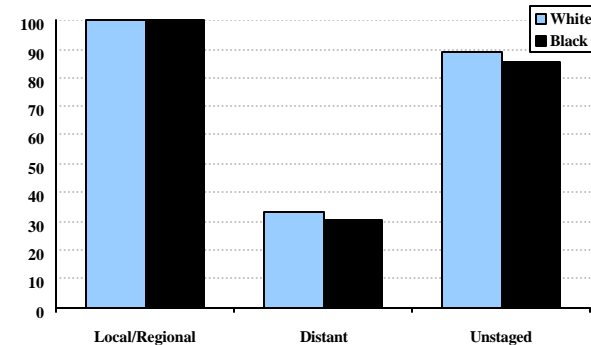


Source: RICR, HEALTH

Prior to a change in the Rules and Regulations of the Rhode Island Cancer Registry in 1992, only about half (51%-54%) of the prostate cancer cases newly diagnosed among RI males were staged using the AJCC system. After the Rules changed, the proportion of cases with AJCC staging increased to 66 % (1993), and has averaged 70% from 1993 through 2000.

Survival

Figure 13-8. Prostate cancer survival rates by race and stage
Five year relative invasive prostate cancer survival rates* by race and stage of disease at diagnosis among males, US, 1992-1999.



* Survival rates are relative rates expressed as percents.
Source: SEER Cancer Statistics Review, 1975-2000.

Based on US data from 1992-1999, five-year relative survival rates for prostate cancer are higher when diagnosed at earlier stages of disease. Prostate cancers diagnosed while localized or regional have a five-year survival rate of 100% among both white and black males. Cancers that are not diagnosed until a distant stage have a five-year survival rate of 33% among whites and 30% among blacks.

Discussion

Summary of Burden

Prostate cancer contributes substantially to the burden of cancer in Rhode Island.

Among Rhode Island men, prostate cancer is the most commonly diagnosed cancer, and the second leading cause of cancer death. Approximately 5,918 males alive today were diagnosed with prostate cancer at some point in the past 25 years.

In Rhode Island, the incidence of prostate cancer increased in the 1990's, probably due to an increase in screening.

Incidence of invasive prostate cancer in RI increased by 50%, from 118 to 177 cases per 100,000 over the period 1989-1999. Although other factors, such as an increase in operations for benign disease of the prostate (NIH), may have contributed to the increase in diagnosed prostate cancer observed in the 1990s, the introduction of the prostate specific antigen (PSA) screening test in the late 1980's is likely responsible for the observed upward trend in prostate cancer incidence. This trend was affected by the timing and proportions of men who were offered the new test and who elected to use it, and probably does not reflect a change in the underlying rate at which new prostate tumors develop.

In Rhode Island, low prostate cancer mortality in the late 1990's may suggest the beginning of a decline.

Prostate cancer mortality varied little until around 1997 when lower rates suggested the beginning of a decline.

Relative Burden

In the early 1990's prostate cancer incidence was lower in Rhode Island than in the nation as a whole. This differential had disappeared with the late 1990's.

Recent trends in prostate cancer incidence in Rhode Island and the United States suggest the influence of a screening innovation. A comparison of Rhode Island and United States rates suggests that the screening innovation (the PSA test) was introduced earlier and more aggressively in other parts of the nation than in Rhode Island.

Disparities

In Rhode Island, black men are more than two times as likely than white men to die from prostate cancer.

This disparity is also seen at the national level. Reasons for this differential are currently unknown and deserve further investigation.

Status of Control Strategies

The burden of prostate cancer may be reduced by assuring state-of-the-art treatment for all prostate cancer patients. [Unproven, but suggested by limited clinical studies:] It is possible that the burden of prostate cancer may be reduced in high-risk populations by screening with the PSA test. Known high-risk populations include black men ages 40 and over and other men with a strong family history of prostate cancer.

Ways to obtain information on the use of prostate cancer screening tests among high-risk men are currently being explored.

By the year 2000, 9 out of 10 prostate cancer case reports in Rhode Island were from American College of Surgeons (ACOS) approved hospitals.

In Rhode Island, the proportion of prostate tumors staged with American Joint Committee on Cancer (AJCC) methodology increased from 51% to 73% in the 1990's.

Cancer Control Priorities for 2004

Reduce the burden of prostate cancer by increasing the proportion of prostate cancer patients who receive state-of-the-art treatment.

Reduce the burden of prostate cancer (and begin to eliminate racial disparities in prostate cancer mortality) by increasing the proportion of high-risk men screened regularly with the PSA test.

Black men ages 40 and over should be the primary focus of any such efforts because of their high prostate cancer mortality rates.

Monitor the literature on the effectiveness of prostate cancer screening.

Ongoing studies may help to clarify whether or not prostate cancer screening reduces the burden of this disease.